## The Philosophy of Mathematical Practice

Paolo Mancosu



## Contents

Biographies	viii
Introduction	I
1. Visualizing in Mathematics	22
2. Cognition of Structure	43
3. Diagram-Based Geometric Practice	65
4. The Euclidean Diagram (1995)	80
5. Mathematical Explanation: Why it Matters	134
6. Beyond Unification	151
7. Purity as an Ideal of Proof	179
8. Reflections on the Purity of Method in Hilbert's Grundlagen der Geometrie	198
9. Mathematical Concepts and Definitions	256
10. Mathematical Concepts: Fruitfulness and Naturalness	276
11. Computers in Mathematical Inquiry	302
12. Understanding Proofs	317
13. What Structuralism Achieves	354
14. 'There is No Ontology Here': Visual and Structural Geometry in Arithmetic	370
15. The Boundary Between Mathematics and Physics	407
16. Mathematics and Physics: Strategies of Assimilation	417
Index of Names	441

viii